

Student Name: \_\_\_\_\_ Student Number: \_\_\_\_\_  
Serial No.: \_\_\_\_\_  
Instructor: M. Z. Abu-Sbeih Math - 132.1 Quiz No. 3  
Date: 2-4-2005.

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Given the function  $f(x) = \frac{1}{1+x^2}$ . Also  $f'(x) = \frac{-2x}{(x^2+1)^2}$  and

$$f''(x) = \frac{2(3x^2-1)}{(x^2+1)^3}$$

1. Find all intercepts.
2. Find asymptotes.
3. Find critical numbers.
4. Find increasing and decreasing intervals.
5. Find local extrema.
6. Find concavity intervals.
7. Find inflection points.
8. Sketch the graph and find absolute extrema.

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